**IDAHO SCHOOL BUS
WITHDRAWAL FROM
SERVICE STANDARDS**

**~~Revised 10/01/2012~~**

**Revised 06/11/15**

**TABLE OF CONTENTS**

Contents

[INTRODUCTION 1](#_Toc288554552)

[BRAKE SYSTEM 2](#_Toc288554553)

[STEERING SYSTEM 3](#_Toc288554554)

[SUSPENSION SYSTEMS 4](#_Toc288554555)

[CHASSIS/FRAME/UNIBODY 5](#_Toc288554556)

[EXHAUST SYSTEM 5](#_Toc288554557)

[GAS OR DIESEL FUEL SYSTEMS 5](#_Toc288554558)

[DRIVE SHAFT 6](#_Toc288554560)

[DIFFERENTIAL 6](#_Toc288554561)

[TRANSMISSION 6](#_Toc288554562)

[ENGINE 6](#_Toc288554563)

[TIRES/WHEELS/HUBS 6](#_Toc288554564)

[AISLES 7](#_Toc288554565)

[ELECTRICAL 7](#_Toc288554566)

[WINDSHIELD WIPERS 7](#_Toc288554567)

[BODY INTERIOR 8](#_Toc288554568)

[BODY EXTERIOR 10](#_Toc288554569)

[LAMPS AND SIGNALS 10](#_Toc288554570)

[EMERGENCY EQUIPMENT 10](#_Toc288554571)

[WHEELCHAIR VEHICLES 11](#_Toc288554572)

[TABLE 1: BRAKE ADJUSTMENTS 12](#_Toc288554573)

[TABLE 2: STEERING WHEEL FREE PLAY 13](#_Toc288554574)

[TABLE 3: HANDRAIL INSPECTION TOOL AND PROCEDURE 14](#OLE_LINK2)

# INTRODUCTION

These standards were developed to ensure that all Idaho school buses are maintained in a safe manner. When inspection of a bus reveals a maintenance condition that is below these standards it shall be the duty of the technician performing the inspection to remove the vehicle from service until the discrepancy has been repaired. This standard is the same for both new and used buses and shall be used whenever an Idaho school bus is being inspected. These standards are to be used whenever a 60-day, Annual or New Bus Inspection is being performed by State Inspectors, District, Contractor, or outside contracted maintenance personnel.

|  |  |
| --- | --- |
| **INSPECTION ITEM**  | **DEFECT**  |
| BRAKE SYSTEM |  |
| Adjustment  | Any one brake beyond the allowed  |
|  | adjustment limit (see table #1)  |
| ABS System (Buses manufactured after  | ~~If the warning light fails to illuminate~~  |
| 1997)  | ~~during the cycle or self-check, or a self-~~ |
|  | ~~diagnostic error is indicated.~~  ABS malfunction Indicator light not functioning as designed or illuminated on all ABS required vehicles. |
| **Air Brakes** |  |
|  | ~~Fails to maintain pressure when:~~  |
|  | ~~a) The leakage rate (brakes released)~~  |
|  | ~~exceeds 2 psi/min.~~  |
|  | ~~b) The leakage rate (brakes applied)~~  |
|  | ~~exceeds 3 psi/min.~~  |
|  | ~~c) System fails to recover air pressure as~~  |
|  | ~~recommended.~~  |
|  | Absence of effective braking action upon application of service brakes |
|  | Audible air leak at chamber. (e.g., ruptured diaphragm, loose chamber clamp, etc.) |
|  | If an air leak is discovered and either the primary or secondary reservoir pressure is not maintained when [396.3(a)(1)]:a. Governor is cut-in;b. Reservoir pressure is between 80-90 psi;c. Engine is at idle; andd. Service brakes are either fully applied or released. |
| Low pressure warning system  | Fails to function as designed.  |
| Brake Shoe/Pad/Lining |  |
| Brake Lining | ~~a) Any front lining worn beyond 8/32 of~~ ~~an inch, measured from center of shoe.~~ |
|  | ~~b) Any rear lining worn beyond 8/32 of an~~ ~~inch, measured from center of shoe.~~ |
|  | ~~c) Any pad worn to the recommended~~ ~~replacement measurement or wear mark.~~ |
|  | ~~d) Any lining is broken, not firmly~~ ~~attached to shoe or plate, or is~~ ~~contaminated with oil or grease.~~ |
|  | ~~e) Fails to make contact with drum, is~~ ~~frozen, binding or uneven.~~ |
|  | Any lining thickness less than allowed by 393.47 |
|  | (1) Steering axle brakes. The brake lining/pad thickness on the steering axle of a truck, truck-tractor or bus shall not be less than 4.8 mm (3 ⁄16 inch) at the shoe center for a shoe with a continuous strip of lining; less than 6.4 mm (1 ⁄4 inch) at the shoe center for a shoe with two pads; or worn to the wear indicator if the lining is so marked, for air drum brakes. The steering axle brake lining/pad thickness shall not be less than 3.2 mm (1 ⁄8 inch) for air disc brakes, or 1.6 mm (1 ⁄16 inch) or less for hydraulic disc, drum and electric brakes.(2) Non-steering axle brakes. An air braked commercial motor vehicle shall not be operated with brake lining/pad thickness less than 6.4 mm (1 ⁄4 inch) or to the wear indicator if the lining is so marked (measured at the shoe center for drum brakes); or less than 3.2 mm (1 ⁄8 inch) for disc brakes. Hydraulic or electric braked commercial motor vehicles shall not be operated with a lining/pad thickness less than 1.6 mm (1 ⁄16 inch) (measured at the shoe center) for disc or drum brakes. |
|  | Lining pad is cracked, broken, not firmly attached or missing (393.47) (surface or heat cracks in the lining should not be considered out of service) |
|  | The friction surface of drum, rotor or friction material are contaminated by oil, grease or brake fluid (393.47) |
|  | Loose or missing component (e.g., chambers, spiders, support brackets) (393.47) |
|  | Fails to make contact with drum/rotor (e.g., frozen, binding, uneven) [393.48(a)] |
|  | Absence of braking action on any axle (e.g., failing to move upon application of a wedge, S-cam, cam or disc brake). |
|  | Rotor or drum has evidence of metal to metal contact on the friction surface [393.47(d)(1)]. |
|  | Brake pad, lining or shoe missing [393.47(a)]. |
| **Hydraulic Brakes** |  |
| ~~Master Cylinder~~  | ~~a) Reservoir is below minimum level.~~  |
|  | ~~b) Any fluid leak in the master cylinder~~  |
|  | ~~unit system.~~  |
| ~~Cylinders and Calipers~~  | ~~Any obvious signs of fluid leakage.~~  |
| ~~Pedal Reserve~~  | ~~Fails to maintain manufacturer designed~~  |
|  | ~~height and travel requirements.~~  |
| ~~Power Assist Units~~  | ~~Fails to function as designed.~~  |
| ~~Low pressure warning system~~  | ~~Fails to function as designed.~~  |
| ~~Brake System Components~~  |  |
| ~~Hoses and Tubing~~  | ~~a) A hose with any damage extending~~  |
|  | ~~through the outer reinforcement ply.~~  |
|  | ~~b) Any bulge or swelling in a hose when~~  |
|  | ~~brakes are applied.~~  |
|  | ~~c) Any restriction due to a cracked, broken~~ ~~or crimped line or hose.~~ |
|  | System brake failure light or low fluid light on or inoperative (393.51); |
|  | Reservoir is below minimum level [393.45(a)] (571.106); |
|  | Any seeping, leaking or swelling of hose(s) under pressure [393.45(a)]; |
|  | Any leak in master cylinder unit [393.45(a)] (571.106); |
|  | Any observable fluid leak in the brake system; |
|  | Brake failure warning system is missing, inoperative, disconnected, defective or activated while the engine is running with or without brake application [393.51(b)] |
|  | ABS malfunction indicator light not functioning as designed or illuminated on all ABS required vehicles. |
| Brake Shoe/Pad/Lining |  |
|  |  |
|  | ~~a) Any front lining worn beyond 3/32 of an inch.~~ |
|  | ~~b) Any rear lining worn beyond 2/32 of an inch.~~ |
|  | ~~c) Any pad worn to the recommended replacement measurement or wear mark.~~ |
|  | ~~d) Any lining is broken, not firmly attached to shoe or plate, or is contaminated with oil or grease.~~ |
|  | ~~e) Fails to make contact with drum, is frozen, binding or uneven.~~ |
|  | Any lining thickness less than allowed by 393.47 |
| (1) Steering axle brakes. The brake lining/pad thickness on the steering axle of a truck, truck-tractor or bus shall not be less than 4.8 mm (3 ⁄16 inch) at the shoe center for a shoe with a continuous strip of lining; less than 6.4 mm (1 ⁄4 inch) at the shoe center for a shoe with two pads; or worn to the wear indicator if the lining is so marked, for air drum brakes. The steering axle brake lining/pad thickness shall not be less than 3.2 mm (1 ⁄8 inch) for air disc brakes, or 1.6 mm (1 ⁄16 inch) or less for hydraulic disc, drum and electric brakes.(2) Non-steering axle brakes. An air braked commercial motor vehicle shall not be operated with brake lining/pad thickness less than 6.4 mm (1 ⁄4 inch) or to the wear indicator if the lining is so marked (measured at the shoe center for drum brakes); or less than 3.2 mm (1 ⁄8 inch) for disc brakes. Hydraulic or electric braked commercial motor vehicles shall not be operated with a lining/pad thickness less than 1.6 mm (1 ⁄16 inch) (measured at the shoe center) for disc or drum brakes. |
|  | Lining pad is cracked, broken, not firmly attached or missing (393.47) (surface or heat cracks in the lining should not be considered out of service) |
|  | The friction surface of drum, rotor or friction material are contaminated by oil, grease or brake fluid (393.47) |
|  |  |
|  | Loose or missing component (e.g., chambers, spiders, support brackets) (393.47) |
|  |  |
|  | Fails to make contact with drum/rotor (e.g., frozen, binding, uneven) [393.48(a)] |
|  |  |
|  | Absence of braking action on any axle (e.g., failing to move upon application of a wedge, S-cam, cam or disc brake). |
|  |  |
|  |  |
|  | Rotor or drum has evidence of metal to metal contact on the friction surface [393.47(d)(1)]. |
|  |  |
|  | Brake pad, lining or shoe missing [393.47(a)]. |
| Drums and Rotors | Any drum or rotor that is cracked, improperly mounted, or worn beyond manufacturers discard specifications. Note: Do not confuse short hairline heat check cracks with flexural cracks. |
| Parking Brake | Is not present or working as designed. |
|  | Fails to hold vehicle in stationary position on normal roadway conditions (absence of ice or snow) in forward or reverse (393.41) [571.105 S5.2.1 and S5.2.3(b)]. |
|  | Parking brake warning lamp fails to function as designed. |
| **STEERING SYSTEM** |  |
| Travel  | Any modification or other condition that  |
|  | interferes with the free movement of any  |
|  | steering component.  |
| Steering Column  | a) Any absence or looseness of U-bolt(s)  |
|  | or positioning part(s).  |
|  | b) Worn, faulty or obviously repair- |
|  | welded universal joint(s).  |
|  | c) Improperly secured steering wheel.  |
| Front Axel Beam  | Any crack(s) or obvious welded repair.  |
| Steering Gear Box  | a) Any loose or missing mount bolt(s).  |
|  | b) Any crack(s) in gear box or mounting  |
|  | brackets.  |
|  | c) Any obvious welded repair.  |
| Pitman Arm  | a) Any looseness of the pitman arm on the  |
|  | steering gear output shaft.  |
|  | b) Any obvious welded repair.  |
| Power Steering  | a) A loose auxiliary power assist cylinder.  |
|  | b) An inoperable power steering pump.  |
|  | c) A fluid leak on the pressure side of the  |
|  | power steering pump.  |
|  | d) Any empty fluid reservoir.  |
| Ball and Socket Joints  | a) Any movement under steering load of a  |
|  | nut stud.  |
|  | b) Any movement in any threaded joint, or stud nut in the direction of the ball stud using 50-100 lbs. of hand pressure measured with a scale.  |
|  | b) Any movement in any threaded joint, or stud nut in the direction of the ball stud using 50-100 lbs. of hand pressure measured with a scale. c) Any obvious welded repair.  |
|  |
|  |
|  |
| King Pins  | a) If Horizontal movement exceeds 3/16  |
|  | in. for wheels 20 in. and larger or 1/8 in.  |
|  | for wheels under 20 in. Pry bar may be used to lift tire up and down, and in and out.  |
|  | b) If vertical movement exceeds 0.100 in.  |
|  | or the manufacturer's specification.  |
| Tie Rods & Drag Links  | a) Loose clamp(s) or clamp bolt(s) on tie  |
|  | rod or drag links.  |
|  | b) Any looseness in any threaded joint.  |
|  | c) Any movement between any linkage member and its attachment other than rotational that measures more than 1/8 inch (.125) with hand pressure of 100 lbs., measured with a scale. |
| Nuts | Any loose or missing fasteners on tie rods, pitman arms, drag links, steering or tie rod arms. |
| Hoses | Any damaged or kinked hoses or lines. |
| Steering Wheel Free Play | Fails to meet the performance test. (see table # 2) |
| **SUSPENSION SYSTEMS** |  |
| Air Suspension | Deflated air suspension (one or more deflated air spring/bag) [393.207(f)] |
|  | Air spring/bag is missing, broken or detached at either the top or bottom [393.207(f)]. |
| Axel Parts/Members  | a) Any U-bolt or other spring to axle  |
|  | clamp bolt(s) cracked, broken, loose, or  |
|  | missing.  |
|  | b) Any spring hanger(s), or other axle  |
|  | positioning parts cracked, broken, loose,  |
|  | or missing that results in shifting of an  |
|  | axle from its normal position.  |
|  | c) Any worn ( beyond manufacturer's  |
|  | specifications) or improperly assembled  |
|  | U-bolt, shock, king pin, ball joint, strut, air  |
|  | bag or positioning component.  |
|  | d) Any spring hanger, assembly part or  |
|  | leaf, broken or missing.  |
|  | e) Any broken coil spring.  |
| Shock Absorbers  | Any that are missing or broken.  |
| **CHASSIS/FRAME/UNIBODY** |  |
| Frame  | a) Any cracked, loose, sagging or broken  |
|  | frame side rail.  |
|  | b) Any obvious bend or damage resulting  |
|  | from a collision.  |
|  | c) Any worn or loose mounting hole.  |
| Cross Members |  Any weight bearing cross member,  |
|  | outrigger or other structural support that is  |
|  | cracked, missing or deformed.  |
| Outriggers/Body Supports  | Any missing, broken, shifted or corroded  |
|  | part that would affect the safe operation of  |
|  | the vehicle.  |
| Bumpers  | Any bumper missing or not secured.  |
| **EXHAUST SYSTEM** |  |
| Leaks  | ~~Any part of the exhaust system leaking, or~~  |
|  | ~~discharging under the passenger or engine~~  |
|  | ~~compartment.~~  |
| Heat Shields  | ~~a) If any required heat shields are missing.~~  |
|  |  ~~b) If any part of the exhaust system is~~  |
|  | ~~closer than 2 inches from any part of the~~  |
|  | ~~fuel or brake system and not protected by~~  |
|  | ~~heat shields.~~  |
|  | The exhaust system is leaking or discharging directly below or at a point forward of the driver or passenger compartment [393.83(g)]. NOTE: does not apply to proper venting for emission systems. |
|  | No part of the exhaust system shall be located and likely to result in burning, charring or damaging the electrical wiring, the fuel supply or any combustible part of the vehicle [393.83(a)]. |
| GAS OR DIESEL FUEL**SYSTEMS** |  |
| Fuel Tanks  | ~~a) Any cap is missing, does not prevent~~  |
| ~~spillage or is not the proper type.~~  |
|  | ~~b) Any tank is leaking or cracked, has~~  |
|  | ~~broken welds. (note: a leaking tank should~~  |
|  | ~~not be confused with fuel spillage from~~  |
|  | ~~filling the tank.)~~  |
|  | ~~c) Any cracked, missing or loose~~  |
|  | ~~mounting strap safety cage.~~  |
| Pumps and Lines  | ~~a) Any cracked, leaking or insecure fuel~~  |
|  | ~~line.~~  |
|  | ~~b) When any internal braid is exposed at~~  |
|  | ~~the first layer on a braided line.~~  |
|  | ~~c) If the pump leaks, is insecure or~~  |
|  | ~~physically damaged.~~  |
|  | Any part of the fuel tank or fuel system not securely attached to the vehicle (393.65). |
|  | A fuel system with a dripping leak at any point (393.67 Tank). |
|  | Dripping leak (396.3(a)(1) leak other than tank). |
|  | Missing fuel cap or system does not seal as designed. |
| **CNG or LPG Fuels** |  |
| Any fuel leakage from the CNG or LPG system detected audibly or by smell and verified by either a bubble test using non ammonia, noncorrosive soap solution or a flammable gas detection meter [396.3(a)(1)].NOTE: Verification is needed to ensure that the sound is not either internal to the fuel system (such as gas flowing in a pressure regulator, or pressure equalizing between manifold tanks) or a leak in the air brake system. |
|  Any fuel leakage from the CNG or LPG system detected visibly (evidence such as ice buildup at fuel system connections and fittings) and verified by either a bubble test using non-ammonia, non-corrosive soap solution or a flammable gas detection meter[396.3(a)(1)].NOTE: Some brief fuel leakage or decompression may occur during refueling, causing temporary frosting of CNG or LPG fuel system parts. If the vehicle has been refueled shortly before inspection, care must be taken to distinguish these temporary frosting occurrences from actual leaks. |
| **DRIVE SHAFT** |  |
| Universal Joints  | a) Any loose, worn, missing or damaged  |
|  | U-clamp.  |
|  | b) Any free play is evident.  |
|  | c) The center bearing is loose or worn  |
|  | beyond manufacturer specifications.  |
| **DIFFERENTIAL** |  |
|  | If the housing is cracked or damaged. |
| **TRANSMISSION** |  |
| Automatic  |  |
|  | If the engine stars in any gear other than  |
|  | neutral or park.  |
| **Standard** |  |
|  | a) If the clutch is not properly adjusted  |
|  | and allows the vehicle to move with the  |
|  | pedal fully depressed.  |
|  | b) If the starter interlock allows the engine  |
|  | to start without the clutch being depressed.  |
|  | (If so equipped).  |
| **ENGINE** |  |
| Components  | Any critical component that fails to  |
|  | function as designed.  |
| Leaks  | Any fluid leaks that would affect the safe  |
|  | operation of the engine.  |
| Accelerator Pedal  | If the pedal is binding and/or the engine  |
|  | will not return to an idle.  |
| **TIRES/WHEELS/HUBS** |  |
| Tire Tread Depth  | a) Any steering axle tire worn less than  |
|  | 4/32 in.  |
|  | b) Any drive axle tire worn less than 2/32  |
|  | in.  |
| Tire Sidewall  | a) Any sidewall that is cut, worn, or  |
|  | damaged to the extent that the ply cord is  |
|  | exposed.  |
|  | b) Any observable bump, bulge, or knotrelated to sidewall or tread separation.  |
| Tire Inflations  | Tire is flat or has a noticeable leak.  |
| Tire Type  | Not of proper type (load range, size.  |
|  | Mismatched, etc.)  |
| Wheels/Rims/Spiders  | a) Any nuts, bolts, studs or lugs are  |
|  | broken, missing, damaged or loose.  |
|  | b) Any wheels/rims cracked, damaged, not  |
|  | properly seated or repaired by welding.  |
| Hubs  | ~~Excessive wheel bearing play that exceeds~~  |
|  | ~~3/16 of an inch for wheels 20 in. and larger or 1/8 in for wheels under 20 in. measured at the bottom of the tire at the floor. Pry bar may be used to lift tire for movement.~~ |
|  | When any bearing (hub) cap, plug or filler plug is missing or broken allowing an open view into hub assembly [396.3(a)(1)]. |
|  | Smoking from wheel hub assembly due to bearing failure [396.3(a)(1)]. |
|  | When any wheel seal is leaking. This must include evidence of contamination of the brake friction material [396.5(b)]. NOTE: Grease/oil on the brake lining edge, back of shoe, or drum edge and oil stain with no evidence of fresh oil leakage are not conditions for an out-of-service violation. |
|  | Lubricant is leaking from the bearing hub and is accompanied by evidence that further leakage will occur [396.5(b)]. |
|  | No visible or measurable amount of lubricant showing in bearing hub [396.5(a)]. |
| **AISLES** |  |
| Clearance | Aisle does not have the required clearance(12 inches).  |
| Obstructions  | There are objects blocking aisles or exits.  |
| ELECTRICAL |  |
| Wiring  | Any required wire or electrical component  |
|  | that is charred or showing evidence of  |
|  | being burnt or exposed.  |
| Battery |  |
| Condition  | If the battery is cracked or leaking or has excess corrosion.  |
| Wires  | Wiring is exposed or loose.  |
| Securement  | Battery is not secured.  |
| **WINDSHIELD WIPERS** |  |
| Operation  | System fails to operate.  |
| Condition  | A blade is missing or broken.  |

|  |  |
| --- | --- |
| BODY INTERIOR |  |
| Panels  | Any panel (ceiling, side, wheel well, etc.)  |
|  | protruding, having sharp edges, or notsecured, that may cause injuries.  |
| Floors  | Floor pan or inner panels that have excessive perforated areas or openings sufficient to cause a hazard to an  |
|  | occupant.  |
| Step Well  | Any part of the step well or support structure that is damaged to the point that it could cause injury to a person or persons entering or exiting the bus.  |
| Step Treads  | Any condition that would cause a tripping  |
|  | hazard.  |
| Handrails  | a) Any that are not properly secured or  |
|  | damaged to the extent they could cause  |
|  | and injury.  |
|  | b) Fails the nut/drawstring test or has not  |
|  | complied with the NHTSA recalls. (See  |
|  | table #3)  |
| Seats/Barriers  | a) Any seat or barrier that is not properly  |
|  | secured to the bus body.  |
|  | b) Seat spacing that fails to comply with  |
|  | FMVSS 222.  |
|  | c) Any seat/barrier material so defective that compromises the integrity of the occupant protection and compartmentalization |
| Seat (Driver)  | a) Fails to adjust or hold proper  |
|  | adjustment.  |
|  | b) Any part of the driver's safety restraint  |
|  | assembly is missing, not properly installed  |
|  | or so defective as to prevent proper  |
|  | securement.  |
| Doors (Service)  | a) Door does not open or close properly.  |
|  | b) Door control handle does not lock in  |
|  | the closed position.  |
|  | c) Door is equipped with a padlock or  |
|  | similar non OEM locking device.  |
| Doors (Emergency Exits)  | a) Any emergency door that does not open  |
|  | freely or completely as designed.  |
|  | b) Any door(s) warning device that is  |
|  | defective. If a bus is equipped with  |
|  | buzzers located at the door and in the dash  |
|  | area the dash area buzzer must work.  |
|  | c) Door or roof hatch is equipped with a  |
|  | padlock or similar non OEM lockingdevice.  |
|  | d) Door holding device is missing or inoperative or fails to hold door open.  |
|  | e) Any emergency door not properly labeled outside in compliance with FMVSS 217. |
|  | f) Any emergency door equipped with a padlock, vandal lock, or non OEM locking device, that when locked allows the engine to start.  |
| Windows  | a) Any window that is shattered, broken  |
|  | through or missing.  |
|  | b) If the driver's side of the windshield has  |
|  | chips, clouding or cracks that obscure the drivers vision.  |
|  | c) Anything mounted on the dash in front  |
|  | of the windshield that would obscure the  |
|  | driver’s vision (such as fans, VCR's,  |
|  | radios, etc.)  |
|  | d) Every school bus windshield shall be  |
|  | free of discoloration or other damage in  |
|  | that portion thereof extending upward  |
|  | from the height of the topmost portion of  |
|  | the steering wheel, but not including a 2  |
|  | inch border at the top and a 1 inch border  |
|  | at each side of the windshield or each  |
|  | panel thereof, except that discoloration  |
|  | and damage as follows are allowed: (1)  |
|  | Coloring or tinting applied in  |
|  | manufacture, for reduction of glare; (2)  |
|  | Any crack that enters the drivers vision  |
|  | area of the road or mirrors; (3) rock chip  |
|  | over 1/4 inch in size that has not been  |
|  | repaired to the extent that it does not  |
|  | hinder the drivers vision of the roadway.  |
| Windows (Emergency Exits)  | a) Any emergency window that fails to  |
|  | open properly.  |

|  |  |
| --- | --- |
|  | b) Any bus that lacks the required number  |
|  | of Emergency windows or roof hatches in  |
|  | compliance with FMVSS 217.  |
|  | c) Any emergency window not properly labeled outside in compliance with FMVSS 217.  |
| Defrosters  | Any defroster fails to operate.  |
| **BODY EXTERIOR** |  |
| Panels, Rub Rails, Trim  | Any body part that is loose, torn,  |
|  | dislocated, or protruding from the surface  |
|  | of the bus, creating a hazard.  |
| Compartment Doors  | Any engine, battery or other door that  |
|  | cannot be properly secured.  |
| Mirrors  | Any required mirror that is missing,  |
|  | broken, discolored or will not hold a set  |
|  | adjustment.  |
| **LAMPS AND SIGNALS** |  |
| Lights  | a) Any one of the following lights not working: Brake, turn signal, headlight (low beam), school bus warning light (amber or red). NOTE: vehicle LED lamps must have more THAN 25% of the DIODES unlit to be considered not working. |
|  | b) Stop arm lamp not working  |
|  | c) Emergency hazard warning lamp system not working |
| Crossing control device | Fails to extend or retract |
| Horn  | Fails to function.  |
| Gauges/Brake Warning  | Any critical brake, tell-tale light, buzzer,  |
|  | or gauge that fails to function as designed.  |
| Stop Arm  | Any stop arm that fails to function  |
|  | properly.  |
| **EMERGENCY EQUIPMENT** |  |
| Fire Extinguisher  | a) Any required fire extinguisher, which is missing or not properly secured or readily accessible to the driver~~.~~ or passengers. |
|  |  |
|  |  |
|  | b) Any extinguisher that is rated less than  |
|  | a 5lb. ABC, fully charged, has no pressure  |
|  | gauge or valid annual inspection tag.  |
|  | c) Is damaged in any way.  |
| First Aid Kit  | a) Any kit that is missing or not located in  |
|  | the driver compartment.  |
|  | b) Any kit that’s contents have been  |
|  | depleted to the point of rendering it as  |
|  | ineffective in meeting its purpose.  |
| Body Fluids Kit  | a) Any kit that is missing or not located in  |
|  | the driver compartment.  |
|  | b) Is missing any of its required  |
|  | components rendering it ineffective.  |
| Webbing (belt) cutter | Missing |
| **WHEELCHAIR VEHICLES** |  |
| ~~Lift~~  | ~~a) Does not function as designed.~~  |
|  | ~~b) Any hydraulic fluid leakage during~~  |
|  | ~~operation.~~  |
|  | ~~c) If the required lift kill switch is not~~  |
|  | ~~operating properly.~~  |
|  | ~~d) If lift is manufactured after April 1, 2005 it shall have platform outer barrier and inner roll stop, wheelchair retention device, vehicle interlock to prevent forward or rearward movement of the vehicle unless the lift is stowed, and manual backup operation. If any component is missing or does not function properly as designed.~~ |
| ~~Wheelchair Tie Downs~~  |  |
|  | ~~When vehicles are transporting~~  |
|  | ~~wheelchairs:~~  |
|  | ~~a) Tie downs are missing or damaged.~~  |
|  | ~~b) Tie downs are missing certification~~  |
|  | ~~tags.~~  |
|  | ~~c) Tie downs are not in compliance with~~  |
|  | ~~FMVSS 209, 210 & 222.~~  |
| ~~Occupant Restraints~~  |  |
|  | ~~When occupant restraints are required:~~  |
|  | ~~a) Restraints are missing or damaged~~  |
|  | ~~b) Restraints are missing certification tags.~~  |
|  | ~~c) Restraints are not in compliance with~~  |
|  | ~~FMVSS 209, 210 & 222.~~  |
|  | Wheelchair lift does not function as designed or is inoperable; |
|  | Platform lift manufactured after April 1, 2005 must meet all the following criteria:a. Jacking prevention;b. Manual backup operating mode;c. Interlocks to prevent forward or rearward mobility of the vehicle unless lift is stowed;d. Wheelchair retention device;e. Platform outer barrier and inner roll stop; |
|  | Any hydraulic line leaking during lift operation;  |
|  | Wheelchair restraint system is missing, incomplete, improperly installed, loose, damaged or does not adhere to the securement manufacturer’s recommendations; |
|  | Any required wheelchair occupant restraint system not in compliance (571.222, SAE J2249 until rescinded by ANSI RESNA WC-18) |

TABLE 1: BRAKE ADJUSTMENTS **Brake Adjustment: Shall be less than those specification contained herein relating to "Brake Adjustment Limit". (Dimensions are in inches.)**

**CLAMP TYPE BRAKE CHAMBER DATA**

|  |  |  |
| --- | --- | --- |
| **TYPE**  | **OUTSIDE DIAMETER**  | **BRAKE ADJUSTMENT LIMIT**  |
| **~~6~~**  | **~~4 1/2~~**  | **~~1 1/4~~**  |
| **~~9~~**  | **~~5 1/4~~**  | **~~1 3/8~~**  |
| **12**  | **5 11/16**  | **~~1 3/8~~ 1.75** |
| **16**  | **6 3/8**  | **1 3/4**  |
| **20****2 ½” Rated Stroke** | **6 25/32**  | **~~1 3/4~~ 2.0** |
| **20****2 ½” Rated Stroke** | **6 25/32** | **2.5** |
| **24** **2 ½” Rated Stroke** | **7 7/32**  | **~~1 3/4~~ 2.0** |
| **24** **2 ½” Rated Stroke** | **7 7/32** | **2.5** |
| **30**  | **8 3/32**  | **2**  |
| **~~36~~**  | **~~9~~**  | **~~2 1/4~~**  |

**~~'LONG STROKE' CLAMP TYPE BRAKE CHAMBER DATA~~**

|  |  |  |
| --- | --- | --- |
| **~~TYPE~~**  | **~~OUTSIDE DIAMETER~~**  | **~~BRAKE ADJUSTMENT LIMIT~~**  |
| **~~16~~**  | **~~6 3/8~~**  | **~~2.0~~**  |
| **~~20~~**  | **~~6 25/32~~**  | **~~2.0~~**  |
| **~~24~~**  | **~~7 7/32~~**  | **~~2.0~~**  |
| **~~24\*~~**  | **~~7 7/32~~**  | **~~2.5~~**  |
| **~~30~~**  | **~~8 3/32~~**  | **~~2.5~~**  |
|  | **~~\* For 3" maximum stroke type 24 chambers~~**  |

**WEDGE BRAKE DATA**

|  |
| --- |
| The combined movement of both brake shoe lining scribe marks shall not exceed 1/8 inch (3.18mm)  |

**BOLT TYPE BRAKE CHAMBER DATA**

|  |  |  |
| --- | --- | --- |
| **TYPE**  | **OUTSIDE DIAMETER**  | **BRAKE ADJUSTMENT LIMIT**  |
| **A**  | **6 15/16**  | **1 3/8**  |
| **B**  | **9 3/16**  | **1 3/4**  |
| **C**  | **8 1/16**  | **1 3/4**  |
| **D**  | **5 1/4**  | **1 1/4**  |
| **E**  | **6 3/16**  | **1 3/8**  |
| **F**  | **11**  | **2 1/4**  |
| **G**  | **9 7/8**  | **2**  |

**ROTO-CHAMBER DATA**

|  |  |  |
| --- | --- | --- |
| **TYPE**  | **OUTSIDE DIAMETER**  | **BRAKE ADJUSTMENT LIMIT**  |
| **9**  | **4 9/32**  | **1 1/2**  |
| **12**  | **4 13/16**  | **1 1/2**  |
| **16**  | **5 13/32**  | **2**  |
| **20**  | **5 15/16**  | **2**  |
| **24**  | **6 13/32**  | **2**  |
| **30**  | **7~~1~~ 1/6**  | **2 1/4**  |
| **36**  | **7 5/8**  | **2 3/4**  |
| **50**  | **8 7/8**  | **3**  |

# TABLE 2: STEERING WHEEL FREE PLAY

**Steering wheel free play shall not exceed the requirements listed in the following chart:**

|  |  |  |
| --- | --- | --- |
| **STEERING WHEEL DIAMETER**  | **MANUAL SYSTEM MOVEMENT 30º**  | **POWER SYSTEM MOVEMENT 45º**  |
| **16" (41cm)**  | **2" (5.1 cm)**  | **4 1/2" (11.5cm)**  |
| **18" (46 cm)**  | **2 1/4" (5.4 cm)**  | **4 3/4" (12 cm)**  |
| **20" (51 cm)**  | **2 1/2" (6.4 cm)**  | **5 1/4" (13.5 cm)**  |
| **22" (56 cm)**  | **2 3/4" (7 cm)**  | **5 3/4" (14.5cm)**  |

**Table # 3**

**The Handrail Inspection Tool and Procedure**

The inspection tool is inexpensive and the procedure for detecting potentially fatal handrail designs is quite simple. The inspection tool is a standard ½” hex nut measuring ¾” across the flats. This nut is tied to 1/8” thick cotton cord measuring 36” in length with overhand knots. The drawstring should have a minimum length of 30" when tied to the nut and attached so that a pull of at least ten pounds does not separate the nut from or break the drawstring.

Steps to conduct a handrail inspection are:

* Stand on the ground outside of the bus
* Drop the inspection tool between the handrail and step well wall, simulating the typical way students exit the bus
* Draw the inspection tool through the handrail in a smooth, continuous slow motion
* Repeat this procedure several times (minimum of three times)

**Note:** It is important to drop the inspection tool over the handrail in such a way as to simulate a child exiting the bus. This is a drop and drag test. Do not create a snagging situation by placing the nut in an area that would not be exposed to a drawstring or other articles.

**Inspection Results**

Take the bus out of service and repair it if the inspection tool catches or snags anywhere on the handrail. If the nut separates from the drawstring or the drawstring breaks, reassemble the tool and retest. If the inspection tool pulls freely without catching or snagging, the bus should not be rejected.